Programme

14:00 - 14:05	**Welcome**
14:05 - 14:15	**Introduction to standardization and the European Standardization system** Ashok Ganesh, CEN-CENELEC Innovation Director
14:15 – 14:30	**Integrating standardization in R&I activities** Livia Mian, CEN-CENELEC Innovation Project Manager
14:30 - 14:45	**Standardization to enhance the scientific credibility of alternative methods** Monica Piergiovanni, JRC
14:45 - 15:00	**SPIDIA4P project, winner of the CEN and CENELEC 'Standards and Innovation' award 2021** Uwe Oelmüller, SPIDIA4P project coordinator
15:00 - 15:15	**RESTORE, REthinking Sustainability TOwards a Regenerative Economy (CA16114)** Carlo Battisti, RESTORE Chair
15:15 - 15:25	**Q&A**
15:25 - 15:30	**Closing**

European Standardization Organizations

Introduction to standardization and the European Standardization system

Ashok Ganesh, CEN-CENELEC Innovation Director

First of all - what is a standard?

Power steering, electric windows and central locking are **standard** features on all models.

What is **standard** practice in a situation like this?

It's a **standard** surgical procedure.

Her **standard** excuse for being late was beginning to wear thin.

There are three categories of accommodation - **standard**, executive and deluxe.

…that's not their usual **standard** of service

What do we mean by Standard?

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 397:2012+A1

October 2012

ICS 13.340.20

Supersedes EN 397:2012

English Version

Industrial safety helmets

Casques de protection pour l'industrie

Industrieschutzhelme

This European Standard was approved by CEN on 17 December 2011 and includes Amendment 1 approved by CEN on 19 July 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

A **Standard**
(French *Norme*, German *Norm*)

technical document

used as a **rule**, **guideline** or **definition**

a **consensus-built**, **repeatable** way of **doing something**

Making standards for Europe

▶ **International**

▶ **Regional (European)**

▶ **National**

ESOs specific fields of competence

Various business sectors

Electrotechnology

Electronic Communications

And more topics common to CEN and CENELEC

CEN and CENELEC National Members

43 National Standardization Organizations

from **34** countries

Austria

Belgium

Bulgaria

Croatia

Cyprus

Czech Republic

Denmark

Estonia

Finland

France

Germany

Greece

Hungary

Iceland

Ireland

Italy

Latvia

Lithuania

Luxembourg

Malta

Netherlands

Norway

Poland

Portugal

Republic of North Macedonia

Romania

Serbia

Slovakia

Slovenia

Spain

Sweden

Switzerland

Turkey

United Kingdom

A system…a network… a platform…

People ➡

200.000
Experts

450
Technical Committees

1.800
Working Groups

Paper ➡

22.000
Standards
(nearly 5.000 HS)

Was 160.000

600
Technical
Specifications

550
Technical Reports

480
CWAs
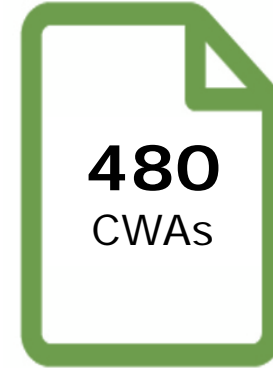
*Statistical pack on www.cencenelec.eu*

How standardization works
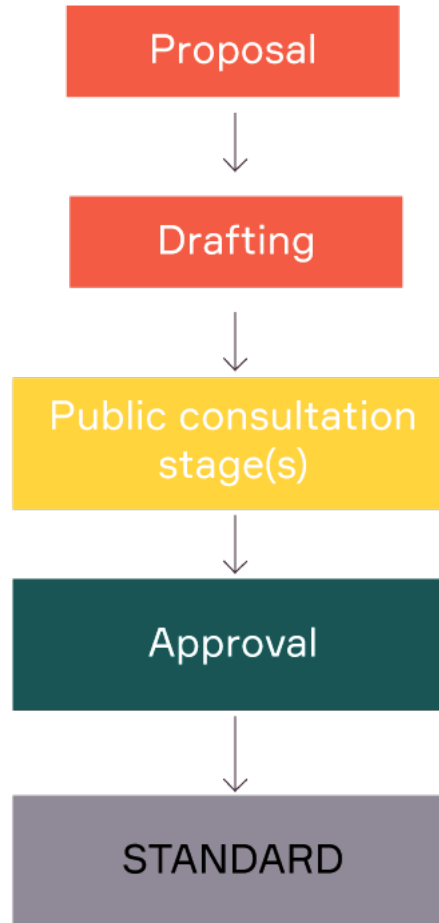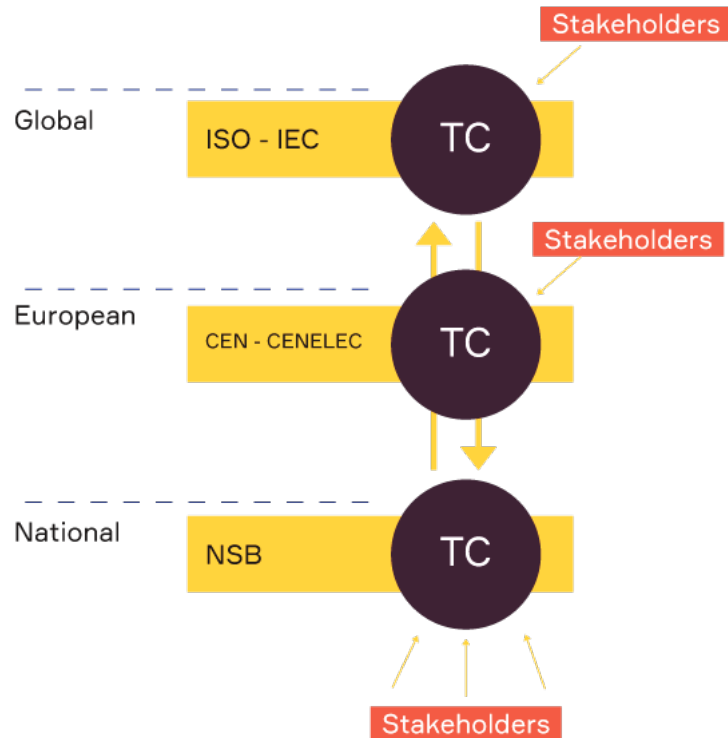
- ➢ Standardization is a **consensus based** process of agreeing voluntary technical specifications among all interested stakeholders.

- ➢ Standards organizations provide the framework and common, transparent rules to the stakeholders to get their agreements.

- ➢ **Voluntary** in use

- ➢ Possible tools to underpin **legislation**

Flexible approach and deliverables

According to needs and requirements

- European Standard (**EN**)

- CEN and or CENELEC Workshop Agreement (**CWA**)

- Technical Specification (**TS**)

- Technical Report (**TR**)

23.076
ENs/HDs

477
CWAs

630
TS

694
TRs
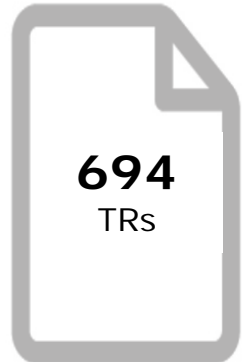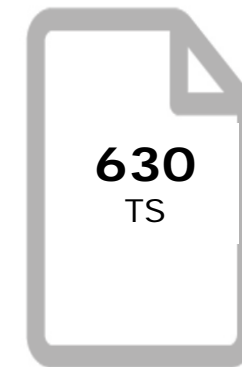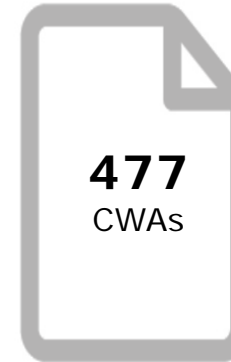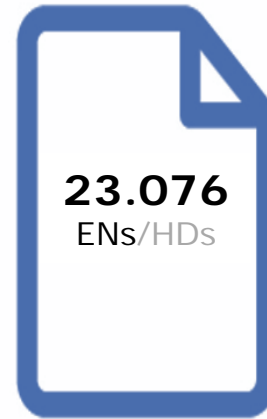
🚫 Certification

European Standardization System

European Standard (EN)

National standards (XX EN)

1x = **34x**

Standards supporting free circulation of goods in the EU and beyond (600 million consumers)

Stakeholders involved

CEN-CENELEC Guide 25

2 Counsellors (EC + EFTA)
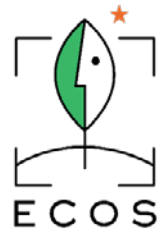**1** CEN **Associated** bodies
11 CEN **& 13** CENELEC **Partner** organizations*
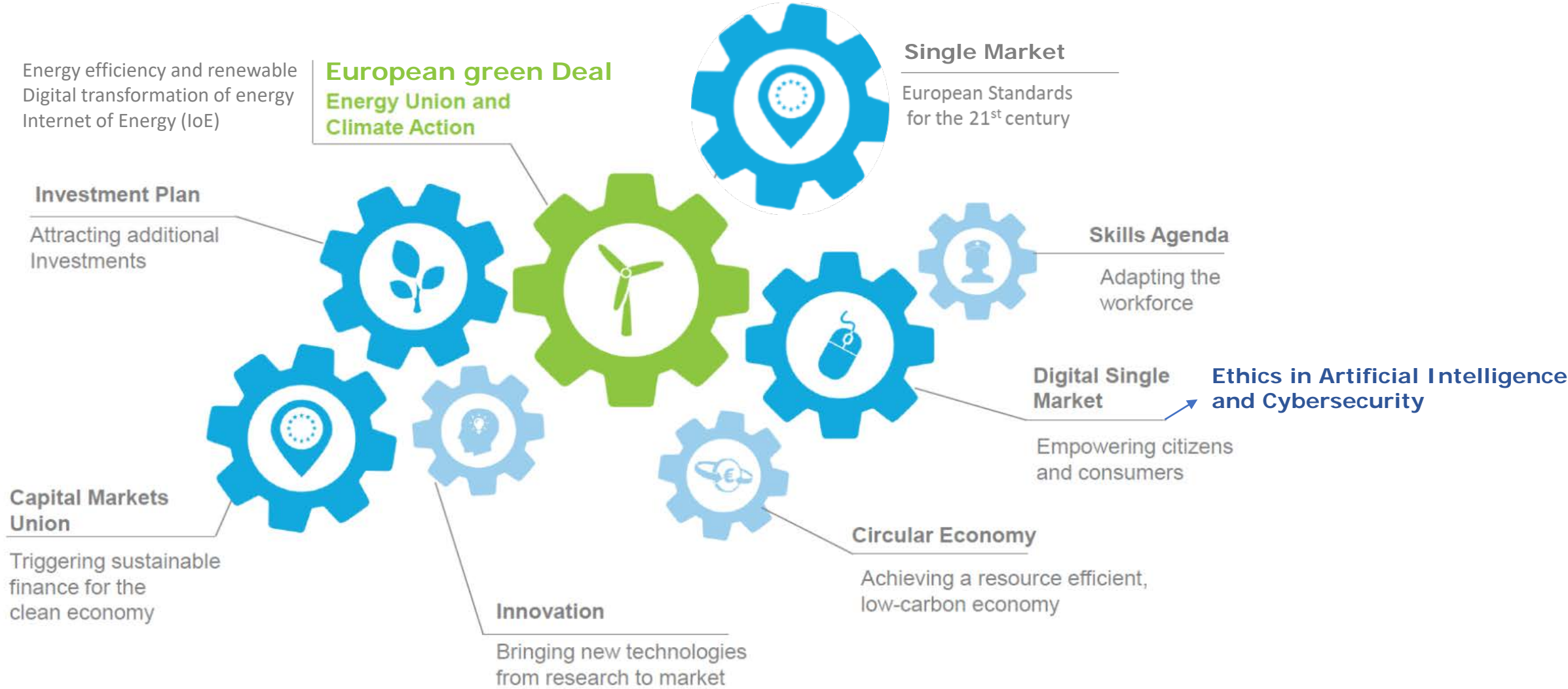**272** CEN **& 26** CENELEC **Liaison** organizations
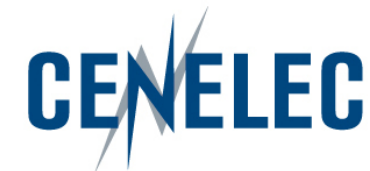**5** CEN **& 4** CENELEC **European Institutional** stakeholders
17 CEN **& 18** CENELEC **Other** Partner Organizations

Including the 4 Annex III Organizations (Reg. 1025)

Links with European policies and priorities

Energy efficiency and renewable
Digital transformation of energy
Internet of Energy (IoE)

European green Deal
Energy Union and
Climate Action

Single Market

European Standards
for the 21st century

Investment Plan

Attracting additional
Investments

Skills Agenda

Adapting the
workforce

Digital Single
Market

Ethics in Artificial Intelligence
and Cybersecurity

Empowering citizens
and consumers

Capital Markets
Union

Triggering sustainable
finance for the
clean economy

Circular Economy

Achieving a resource efficient,
low-carbon economy

Innovation

Bringing new technologies
from research to market

European Standardization Organizations

Integrating standardization in R&I

Livia Mian, CEN-CENELEC Innovation Project Manager

CEN-CENELEC Innovation Plan

Three main goals:

1. Engage with researchers and innovators

2. Innovation-ready deliverables (Fast-Track)

3. Partner with National and European institutions

CEN-CENELEC Innovation activities

▶ **Integrating standardization and research**

▶ **Identifying new topics for standardization**
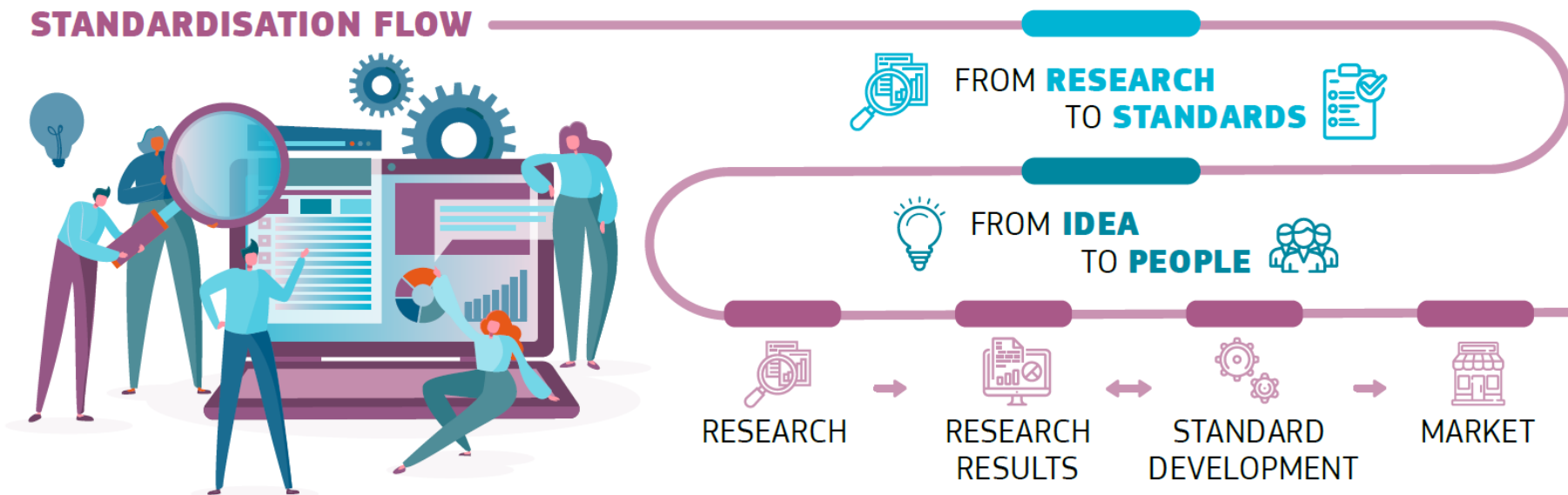
▶ **Raising awareness and building system capacity**

Integrating standardization and research

Valorising research results

Standards are a crucial tool to get the most out of research results. This is because they:

▶ help researchers to bring their innovation to the market by making their results transparent and ensuring high quality

▶ build consumer trust in innovative technology because they guarantee safety and quality

▶ codify the technologies requirements and inform both manufacturers and consumers on what to expect

▶ allow technologies and materials to be interoperable

STANDARDISATION FLOW

FROM **RESEARCH** TO **STANDARDS**

FROM **IDEA** TO **PEOPLE**

RESEARCH → RESEARCH RESULTS ↔ STANDARD DEVELOPMENT → MARKET

Standards & Technology Readiness (TRL)

Knowledge development	Technology development	Business development

TRL 1	**TRL 2**	**TRL 3**	**TRL 4**	**TRL 5**	**TRL 6**	**TRL 7**	**TRL 8**	**TRL 9**
Basic principles observed	Technology concept formulated	Experimental proof of concept	Technology validated in lab	Technology validated in relevant environment	Technology demonstrated in relevant environment	Prototype demonstration in operational environment	System complete and qualified	Actual system proven in operational environment

Semantic standards	**Measurement & testing standards**	**Interface standards**	**Product & service specific standards**
facilitate efficient communication in basic research investigating new technologies	*allow progress towards first product-related developments*	allow the interoperability of components integrated into product or process technology	*define the characteristics of a product/service and their performance thresholds (such as quality and safety)*

How to include standardization in R&I activities

Screen existing standards

Standards are state of the art for industrial and societal practices

Join an existing standardisation community

You can join the Technical Committee works by participating as an expert through your NSB. You can ask for a **Project Liaison**, your project will be then represented and can fully contribute but without voting rights.

Revise an existing European Standard or develop a new one

Review ongoing standardization works relevant for your activity and to integrate some of your results in them. Works can be for new standards or for the modification of existing ones.

Fast track to new standardisation

If you plan to develop new standards a **CWA** is a fast-track to new standardization

Screen existing standards

- The **CEN and CENELEC standard database**,
- The **CEN list of Technical Committees** or the **CENELEC list of Technical Committees**
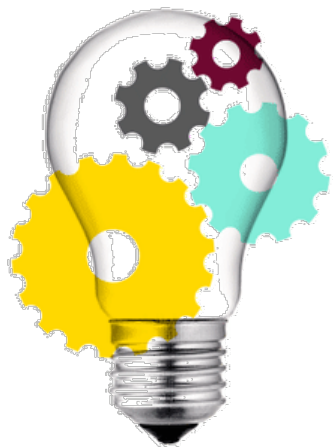
Join existing standardization community

► Establishing a **Project Liaison** is the formal mechanism that allows a research project to collaborate with an exciting Technical Committee (TC) active in the same field

► The project representative can participate in the Technical Committee directly, thus ensuring synergies between the research and standardization work

Apply for a Liaison

Fast track to standardization

▶ CEN/CENELEC Workshop Agreement (CWA) is a **pre-standardization** deliverable designed to meet an immediate need, that can be used as a fast-track to future standardization activities

▶ It is **fast and flexible** to develop (~ 6-12 months) in a Workshop open to the direct participation of anyone and reflects the consensus of identified stakeholders

▶ Once published, a CWA is valid for **3 years**, after which it can be confirmed for a maximum of 3 years, revised or withdrawn

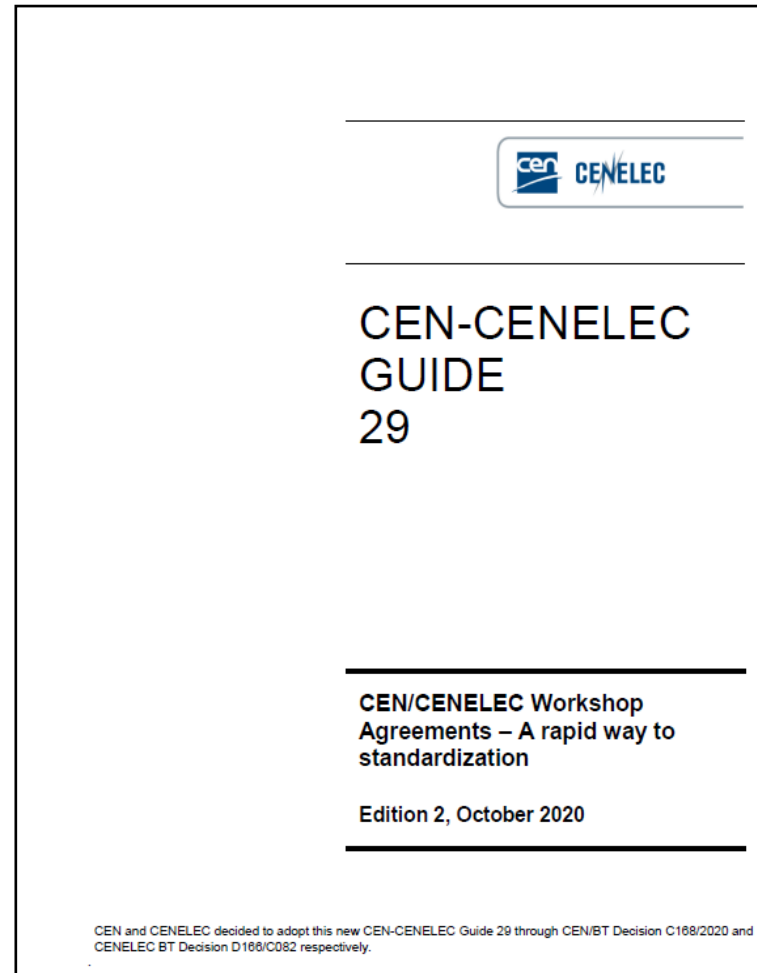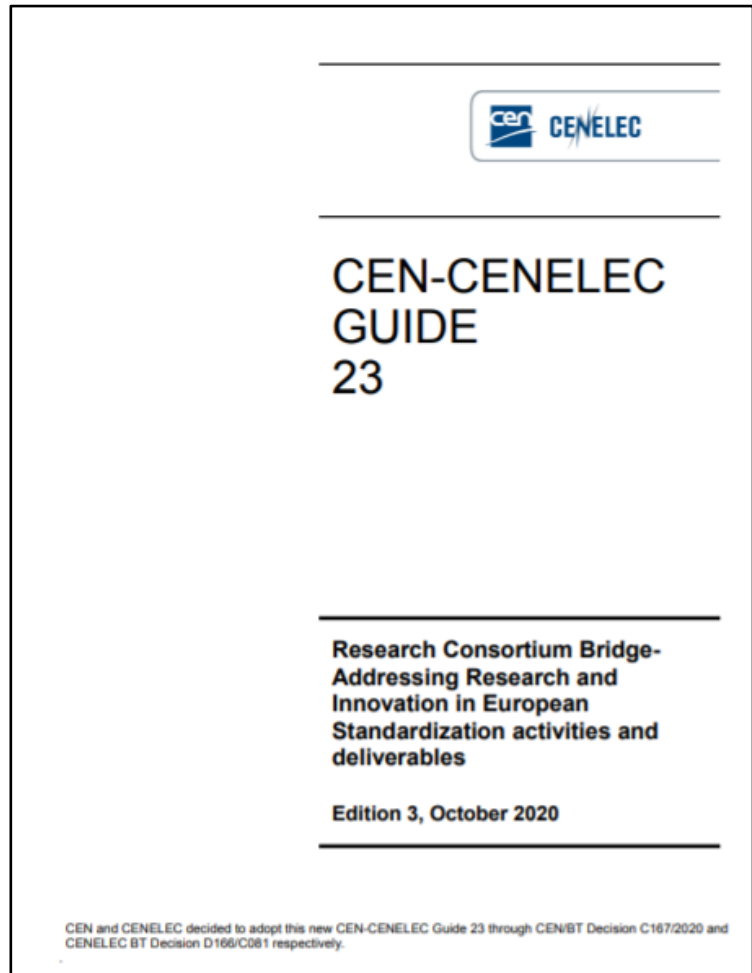| Prepare proposal | Kick-off meeting | Prepare CWA draft | Open for comments | CWA final version ready | CWA Published Ready for use | Market |

CWAs from research: some examples

- ▶ [CWA 50271:2021](#) Recommendations for a modular and cross-cutting Power Take-Off for wave energy direct drive linear solutions (H2020 project H2020 SEA TITAN)

- ▶ [CWA 17664:2021](#) Lower-limb wearable devices - Performance test method for walking on uneven terrain (EUROBENCH and INBOTS H2020 projects)

- ▶ [CWA 17794:2021](#) Measurement of diffusible hydrogen in metallic materials (FormPlanet H2020 project)

- ▶ [CWA 17807:2021](#) Dismantling methods and protocols in a Circular Economy Framework - Composite recovery in the automotive industry (ECOBULK H2020 project)

CEN-CENELEC Guides

CEN-CENELEC GUIDE 23

Research Consortium Bridge- Addressing Research and Innovation in European Standardization activities and deliverables

Edition 3, October 2020

CEN and CENELEC decided to adopt this new CEN-CENELEC Guide 23 through CEN/BT Decision C167/2020 and CENELEC BT Decision D166/C081 respectively.

CEN-CENELEC GUIDE 29

CEN/CENELEC Workshop Agreements – A rapid way to standardization

Edition 2, October 2020

CEN and CENELEC decided to adopt this new CEN-CENELEC Guide 29 through CEN/BT Decision C168/2020 and CENELEC BT Decision D166/C082 respectively.

Identifying new topics for standardization

Foresight for standardization

▶ Bioluminescence

▶ Cloud and Edge Computing

▶ Equal Pay Management Systems

▶ Optoelectronics for Data Transmission

▶ Flexible Solar Cells for Portable Devices

▶ Smart Floating Farms

▶ DNA-Based Data Storage

▶ Airborne Wind Energy Systems

▶ Smart Tattoos

▶ Digital Twin in Ocean Environments

▶ Desalination

▶ 4D Printing

▶ Flexible Electronics

▶ Carbon Capture and Storage (CCS)

▶ Exoskeleton

Putting Science into Standards

▶ CEN and CENELEC cooperation with the **Joint Research Centre of the European Commission (JRC)**

▶ Some past events include:
- Power-to- Hydrogen and HCNG (Hydrogen and Compressed Natural Gas)
- Evidence-Based Quality Assurance – An Example For Breast Cancer
- Safety, Performance, Second life and Recycling of Automotive Batteries for e-Vehicles
- Making Quantum Technologies ready for Industry
- Organ on Chip toward standardization
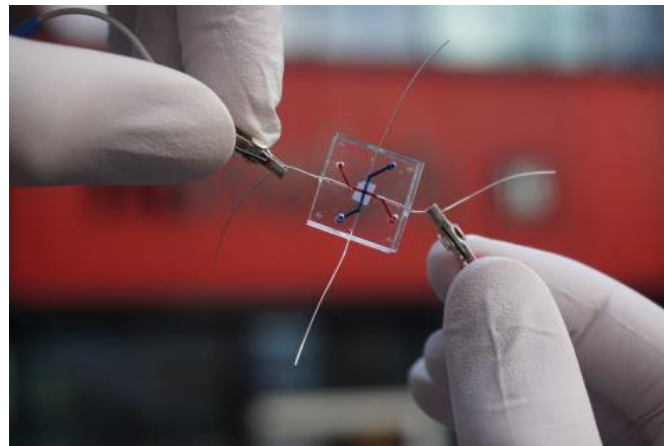
28-29 April 2021
Organ-on-chip
Putting Science into Standards

#Standards4OoC

Standardization in emerging technologies

- ▶ CEN-CLC/JTC 19 Blockchain and Distributed Ledger Technologies

- ▶ CEN-CLC/JTC 20 Hyperloop systems

- ▶ CEN-CLC/JTC 21 Artificial Intelligence

- ▶ CEN-CLC Focus Group Quantum Technologies

- ▶ CEN-CLC Focus Group Organ on Chip

Raising awareness and building system capacity

Standards+Innovation

www.standardsplusinnovation.eu

Standards and Research & Innovation

Click on any topic below or use the menu above to jump to any chapter

Introduction

A. Understanding standardization

B. Standardization processes

C. Compliance and standards

D. Standardization and Research & Innovation

Standards + Innovation

Home   Researchers   Innova

Get started with standardization

Get started

www.standardspluselearning.eu/

#standardsplusinnovation

Standards+Innovation Awards

Categories:

1. Individual researcher/innovator

2. Research project
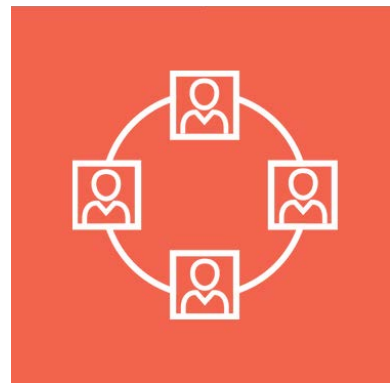
3. Young Researcher

4. Technical Body Officer
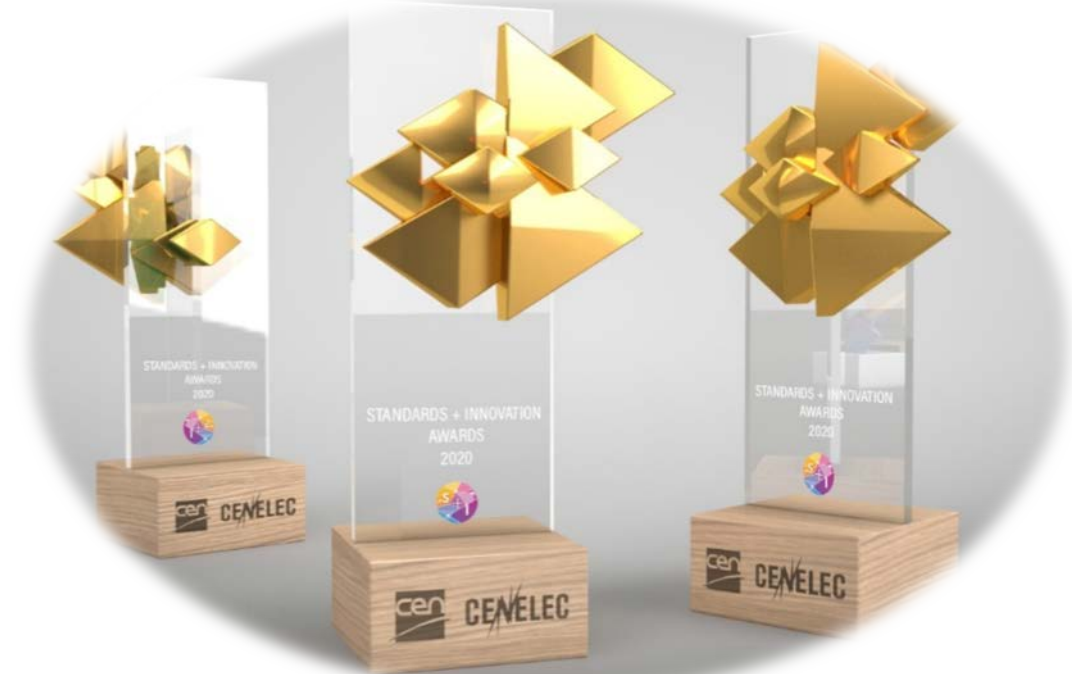
Read more.

What is in for you?

Impact and market access: applying existing standards and generating new ones increases the impact and market access of R&I projects and activities. It generates user trust and makes the project results more accessible to industry and societal actors.

Network: participating in standardization enlarges the R&I network with relevant stakeholders sharing the standardization works

Recognition: standardization helps the R&I community gain recognition for their work by acknowledging the participation in standardization works or including references to relevant scientific publications in standards.

Stay in touch

▶Join Standards+Innovation Community on LinkedIN

▶Contact CEN-CENELEC Research Helpdesk

▶Contact your National Standardization Body
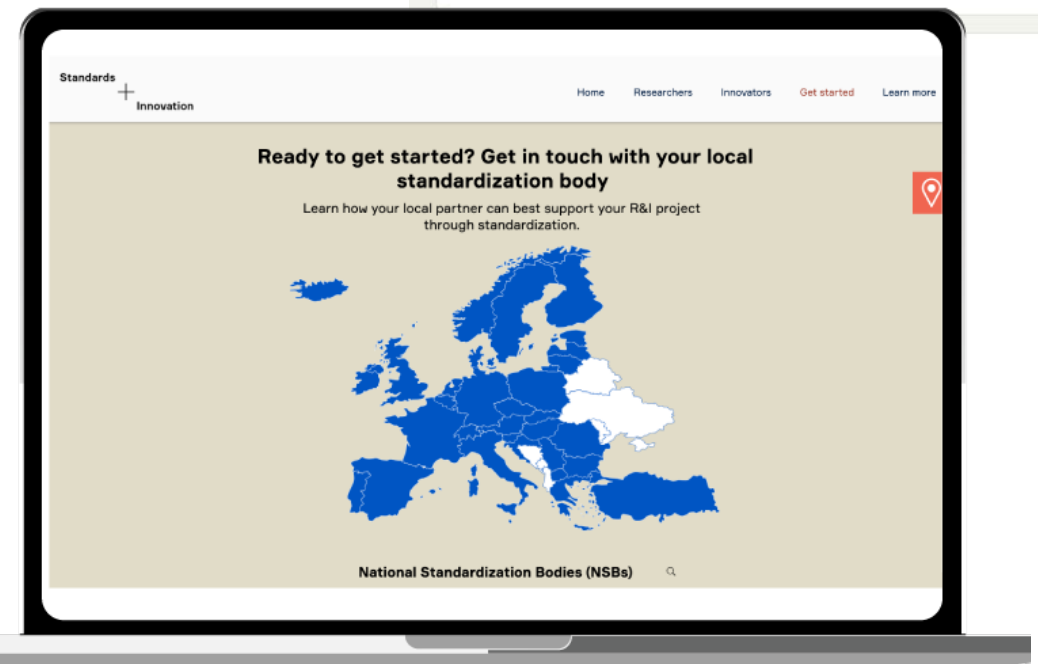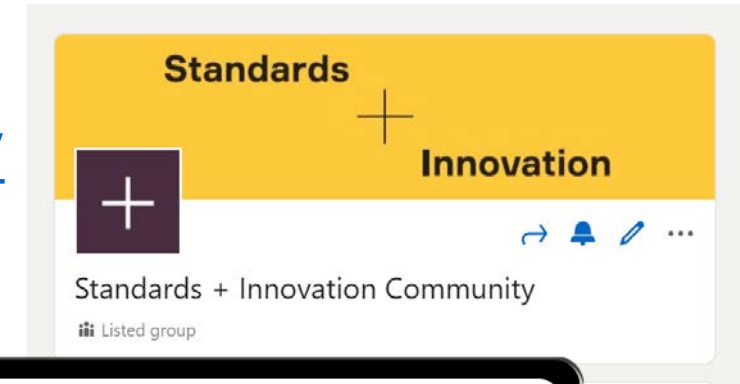
Thank you!

www.cencenelec.eu

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